REMARKS

Claims 8 - 27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Tuttle et al in view of Moore et al. The Examiner's thoughtful consideration of the present application is most appreciated. In view of the present amendment and following remarks, the Examiner is respectfully requested to reconsider the outstanding rejection and allow the present application to issue.

Interview Summary

Examiner Heffington is thanked for the personal interview granted Monday, October 5, 2009. The participants included Examiner Heffington, the applicants' representative Al Watkins, applicant Doug Simons, and assignee representative George Mackintosh. Claim 8 and several proposed claims were discussed, and the Tuttle reference was discussed. While no binding agreement was reached, the Examiner's continued astute suggestions regarding the claim language are greatly appreciated, and have facilitated the drafting of the present amendment.

The Present Amendment

By way of the present amendment, the claims now more clearly recite what the applicants regard as the invention. Each of the independent claims have been amended herein to specifically recite searching for an element or entity which may be found at one of a plurality of potential or possible locations contained within and comprising less than the image of the system under test. Support for this language is found on page 8 in lines 17-19, between page 10 line 4 and page 11, line 9, and between page 15, line 4 and page 16, line 10 of the present specification.

Newly added claim 28 incorporates language similar to claim 14, both slightly reworded and slightly rearranged. The Examiner's consideration of this new claim language is respectfully requested. Newly added claim 29 incorporates features found in previously presented claim 24 and incorporates those as dependent upon claim 28. Newly added claim 30 is somewhat more

specific than claim 29. Support is found for this new language for example in the specification on page 10 in lines 4 - 15. Newly added claims 31 - 35 recite specific examples of what the recited "entity" might comprise. Support for these new claims 31 - 35 may be found in the present specification on page 8 in lines 17 - 19, for example. Newly added claim 36 recites that the "second computing machine further comprises a virtual network computing component." Support for this language is found on page 14 in lines 17 - 19.

Specific Novel Features Found in the Present Claim Recitations

The present invention searches the pixel image of a machine under test for "a first graphical element which may be found at one of a plurality of potential locations contained within and comprising less than said pixel image" (claim 8, lines 6-8). Similar recitations are found in the remaining independent claims 14, 16 and 28. The individual elements may comprise "icons as illustrated, or various buttons, message boxes, prompts or any other graphical image or control" (Present specification, page 8, lines 17-19). In addition to this search for the first graphical element, which might be found at different locations upon the graphical user interface, the present invention further recites the step of: "generating a user peripheral input device input action within said second computer system graphical user interface . . . responsive to said receiving and searching steps." (claim 8, lines 9-14). Similar but alternative language is found in claim 16, lines 6-15, and claim 14, lines 12-18.

Claims 24 and 29 additionally recite: "locating a user peripheral input device input action at a location relative to said first entity" (claim 24, line 3; claim 29, lines 3-4).

As a result of these features, the user does not need to worry where on the screen the image element appears, and can make intelligent decisions about any subsequent actions, including the placement of a mouse click or other similar action relative to the placement of the individual element, and also alternatives that might arise and still be handled to continue the testing.

By being able to search for image elements and make intelligent decisions, a calculator can

be tested through all numbers and operations by storing the images for each of the operations and the numbers 0 - 9. For a simple calculator, the operations might be "add", "subtract", "multiply", "divide", "equals", and "clear". Then, using simple "For Next", "Repeat With", "Do While" loops or the like, each of the operations may be tested and the results confirmed by saving the images of operations, numerals and any other necessary elements. In the present invention, this for exemplary purposes might be achieved using very simple loops requiring less than forty lines of code. Both the code and the images will take up very little storage space. This is done without concern for where on the screen the calculator might appear. In contrast, Tuttle must actually execute every possible test, and then save the image to compare with future systems. The storage of these images will require an impractical amount of time, and an unreasonable amount of storage space.

The Tuttle and Moore et al References

The applicants and their representative believe the Examiner may have misunderstood the recitations cited within the Tuttle and Moore et al references that are indicated as being relevant to these claim recitations.

The Examiner will recognize that Tuttle et al stores a representation of the entire screen, or a predetermined portion of lines or screen width, and then checks during testing to see if the exact pattern reproduces later. Unfortunately, a large number of factors will change between diverse computers that will interfere with this test. Tuttle contemplates some of these factors, such as flashing cursors, and considers cutting off a portion of the screen to remove clocks and the like. However, the Examiner will recognize, for example, that modern windowing programs normally cascade, meaning that when a new window is opened, the new window will be shifted down and to the right from the previous window. So, unless exactly the right number of windows have been opened prior to the start of the Tuttle testing system, Tuttle will reject a perfectly fine operation due to the shifting resulting from cascading windows.

In addition, since Tuttle is only able to match a screen for "pass/fail regression testing" (Tuttle Col 14, lines 38-41), there is no opportunity to choose what action to take, depending upon what occurs. Instead, Tuttle must simply halt the program and return an error when a screen image fails to match.

The Examiner will appreciate that Tuttle is consequently limited solely to testing of hardware such as might occur at a manufacturing facility, where every computer is loaded with the same software, and is tested immediately at start-up so that subsequent windows will cascade at the proper location.

In the outstanding office action on page 5 under the reference to claims 8 and 16, subsection b, the Examiner states that Tuttle describes in column 8, lines 39-47 a search for a first graphical element. Upon further review, the Examiner will agree that this reference is instead to composite data, which is defined in column 6, lines 64-66 as a combination of input data, DVPU/Host commands, and comments. From column 7, lines 3-11, the composite data is received from an input device 110 and then forwarded to the DVPU, and then further subdivided into the original DVPU/Host commands and input data that will be forwarded to the SUT. In other words, Tuttle column 8, lines 39-47 is simply describing that this composite data, which might for exemplary purposes include a typed letter "A", can be encoded in any desirable way, such as is commonly done with modern keyboards. Tuttle does not search for graphical elements that are a subset of the pixel image, nor does Tuttle then generate actions responsive to the search results, both which are recited in the present claims.

In the outstanding action beginning in the first full paragraph of page 8, and again in the last full paragraph on page 18, the Examiner further proposes that it would be obvious to pass a signal through an i/o channel responsive to the receiving step, and that it would be obvious to control a flow of execution of said local system through a scripting language having scripting commands in combination with said command language set responsive to a detection of said first entity during said image processing step. Neither Tuttle nor Moore illustrates the detection of a

graphical element as recited, nor do these references then respond to either control execution flow or to control passage of a signal through an i/o channel. Consequently, the obviousness is herein traversed, and the Examiner is respectfully requested to withdraw this basis for rejection.

In the outstanding office action on page 20, the Examiner further rejects claim 24. As already presented herein above, neither Tuttle nor Moore locate the graphical element as recited by the claims, nor do they then locate a user peripheral input device input action at a location relative to said first entity. The reference the Examiner makes to Tuttle column 39, lines 9-20 is instead a reference to programming code modules written using the C programming language. Consequently, the Examiner is requested to reconsider and withdraw this ground for rejection.

No new matter has been added by way of the present amendments. Consequently, in view of the present amendment and remarks, the Examiner is respectfully requested to reconsider the rejections of record and allow the present application to issue. The present response is not considered to acquiesce with regard to the novelty of the dependent claims not specifically addressed herein, and should the Examiner need to consider these as well, the Examiner is also respectfully requested to specifically reconsider the novelty found therein in light of the foregoing discussions.

Should there remain any open issues in this application which might be resolved by telephone, the Examiner is respectfully requested to call the undersigned at 320-363-7296 to further discuss the advancement of this application.

Sincerely,

Albert W. Watkins

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